(I) 
$$G = \begin{bmatrix} R_1 \\ C \\ R_2 \end{bmatrix}_a [M_1]_b = \begin{bmatrix} Y_1 \\ C \\ \end{bmatrix}_c N_J$$

wherein:

5

$$\text{J is } - \overset{\text{E}_{1}}{\overset{\text{F}_{2}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}{\overset{\text{E}_{4}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}}{\overset{\text{E}_{3}}}{\overset{E}_{3}}}{\overset{\text{E}_{3}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}}{\overset{\text{E}_{3}}}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}{\overset{\text{E}_{3}}}}}}}}}}}}}}}}}}$$

10 or 
$$\begin{bmatrix} \frac{R_3}{C} \\ \frac{R_4}{C} \end{bmatrix}_{d2} \begin{bmatrix} M_2 \end{bmatrix}_{e2} \begin{bmatrix} \frac{Y_2}{C} \\ \frac{1}{C} \end{bmatrix}_{f2} \begin{bmatrix} \frac{R_5}{C} \\ \frac{R_6}{R_6} \end{bmatrix}_{i2} \begin{bmatrix} \frac{R_7}{C} \\ \frac{R_8}{R_6} \end{bmatrix}_{i2} \begin{bmatrix} \frac{R_9}{C} \\ \frac{R_{10}}{R_{10}} \end{bmatrix}_{12} \begin{bmatrix} \frac{Y_3}{C} \\ \frac{R_{10}}{R_{10}} \end{bmatrix}_{12}$$

E<sub>1-4</sub> are independently selected from the group consisting of hydrogen,

C<sub>1-6</sub> alkyls, C<sub>3-12</sub> branched alkyls, C<sub>3-8</sub> cycloalkyls, C<sub>1-6</sub> substituted alkyls,

 $C_{3-8}$  substituted cycloalkyls, aryls, substituted aryls, aralkyls,  $C_{1-6}$  heteroalkyls,

substituted C<sub>1-6</sub> heteroalkyls, C<sub>1-6</sub> alkoxy/phenoxy, C<sub>1-6</sub> heteroalkoxy,

$$= \begin{bmatrix} R_{3} \\ C \\ R_{4} \end{bmatrix}_{d1} \begin{bmatrix} M_{2}]_{e1} + \begin{bmatrix} Y_{2} \\ C \\ R_{6} \end{bmatrix}_{g1} \begin{bmatrix} R_{5} \\ C \\ R_{6} \end{bmatrix}_{g1} \begin{bmatrix} M_{3}]_{h1} + \begin{bmatrix} R_{7} \\ C \\ R_{8} \end{bmatrix}_{i1} \begin{bmatrix} M_{4}]_{j1} \\ R_{10} \end{bmatrix}_{i1} \begin{bmatrix} R_{9} \\ R_{10} \end{bmatrix}_{i1} \begin{bmatrix} M_{5}]_{m1} - C - B \end{bmatrix}$$

20 or 
$$\frac{\begin{bmatrix} R_3 \\ C \\ R_4 \end{bmatrix}_{d2} \begin{bmatrix} M_2 \end{bmatrix}_{e2} + \begin{bmatrix} Y_2 \\ C \\ R_6 \end{bmatrix}_{g2} \begin{bmatrix} R_5 \\ C \\ R_8 \end{bmatrix}_{i2} \begin{bmatrix} R_7 \\ C \\ R_8 \end{bmatrix}_{i2} \begin{bmatrix} R_9 \\ C \\ R_{10} \end{bmatrix}_{i2} \begin{bmatrix} M_5 \end{bmatrix}_{m2} - \begin{bmatrix} Y_3 \\ C \\ R_{10} \end{bmatrix}_{i2}$$

and at least one of E<sub>1-4</sub> includes a B moiety;

B is a leaving group, OH, a residue of a hydroxyl-containing moiety, a residue of an amine-containing moiety or

$$-$$
N $\frac{1}{2}$ 

wherein  $\not E_5$  is independently selected from the same group which defines

$$E_{1-4}$$
;  
 $J_1$  is  $-C-E_{2a}$ ,  
 $E_{2a}$ 

30

 $E_{1a-3a}$  are independently selected from the group consisting of hydrogen,  $C_{1-6}$  alkyls,  $C_{3-12}$  branched alkyls,  $C_{3-8}$  cycloalkyls,  $C_{1-6}$  substituted alkyls,  $C_{3-8}$  substituted cycloalkyls, aryls, substituted aryls, aralkyls,  $C_{1-6}$  heteroalkyls, substituted  $C_{1-6}$  heteroalkyls,  $C_{1-6}$  alkoxy, phenoxy,  $C_{1-6}$  heteroalkoxy,

or 
$$- \begin{bmatrix} R_{3b} \\ \dot{C} \\ \dot{R}_{4b} \end{bmatrix}_{d4} \begin{bmatrix} M_{2b}]_{e4} & \begin{bmatrix} Y_{2b} \\ \dot{C} \\ \dot{R}_{6b} \end{bmatrix}_{g4} \begin{bmatrix} R_{5b} \\ \dot{C} \\ \dot{R}_{6b} \end{bmatrix}_{i4} \begin{bmatrix} R_{7b} \\ \dot{C} \\ \dot{R}_{8b} \end{bmatrix}_{i4} \begin{bmatrix} R_{9b} \\ \dot{C} \\ \dot{R}_{10b} \end{bmatrix}_{i4} \begin{bmatrix} R_{9b} \\ \dot{C} \\ \dot{R}_{10b} \end{bmatrix}_{i4} \begin{bmatrix} Y_{3b} \\ \dot{C} \\ \dot{R}_{10b} \end{bmatrix}_{i4}$$

wherein  $B_1$  is a leaving group, OH, a residue of a hydroxyl-containing moiety or a residue of an amine-containing moiety or  $E_6$ 

wherein E<sub>6</sub> is independently selected from the same group which defines

10 
$$E_{1-4}$$
;  
 $J_2$  is  $-C-E_{2b}$ ,  
 $\dot{E}_{3b}$ 

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wherein E<sub>1b-3b</sub> are independently selected from the group consisting of hydrogen, C<sub>1-6</sub> alkyls, C<sub>3-12</sub> branched alkyls, C<sub>3-8</sub> cycloalkyls, C<sub>1-6</sub> substituted alkyls, C<sub>3-8</sub> substituted cycloalkyls, aryls, substituted aryls, aralkyls, C<sub>1-6</sub> heteroalkyls, substituted C<sub>1-6</sub> heteroalkyls, C<sub>4</sub> alkoxy, phenoxy, C<sub>1-6</sub> heteroalkoxy,

wherein B<sub>2</sub> is a leaving group, OH, a residue of a hydroxyl-containing moiety or a residue of an amine-containing moiety;

G is a polymeric residue;

Y<sub>1-3</sub>, Y<sub>2a-d</sub> and Y<sub>3a-d</sub> are each independently O, or NR<sub>11a</sub>

M<sub>1-4</sub>, M<sub>2a-2d</sub>, M<sub>3a-3d</sub>, and M<sub>4a-4d</sub> are each independently O, S or NR<sub>11b</sub>;

 $M_5$  and  $M_{5a-d}$  are each independently X or  $\emptyset$ ,

wherein X is an electron withdrawing group and Q is a moiety containing a free electron pair positioned three to six atoms from  $C(=Y_3)$  or  $C(=Y_{3a-d})$ ;

 $R_{1-10}$ ,  $R_{1a-11a}$ ,  $R_{1b-11b}$ ,  $R_{1c-10c}$  and  $R_{1d-10d}$  are each independently selected from the group consisting of hydrogen,  $C_{1-6}$  alkyls,  $C_{3-12}$  branched alkyls,  $C_{3-8}$  cycloalkyls,  $C_{1-6}$  substituted alkyls,  $C_{3-8}$  substituted cycloalkyls, aryls, substituted aryls, aralkyls,

10  $C_{1-6}$  heteroalkyls, substituted  $C_{1-6}$  heteroalkyls,  $C_{1-6}$  alkoxy, phenoxy and  $C_{1-6}$  heteroalkoxy; and

a, b, c, d1-d6, e1-e6, f1-f6, g1-g6, h1-h6, i1-i6, j1-j6, k1-k6, l1-l6, m1-m6 are each independently zero or a positive integer.

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